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Air Operating Permit
Excess Emissions Report
Form Part II

Name of Facility	Shell, Puget Sound Refinery	Reported by	Tim Figgie
Date of notification	April 30, 2014	Incident type: breakdown/ upset/startup or shutdown	Breakdown
Start Date	April 30, 2014	Start Time:	1:00 PM
End Date	April 30, 2014	End Time:	3:00 PM
Process unit or system(s): Flare			

Incident Description

On April 30, 2014 at approximately 1pm high H2S readings occurred in the flare when the wet gas compressor (WGC) tripped, followed by a trip of the FCC Unit. The WGC tripped when the absorber tower charge pump 4BG30 tripped out and the spare pump 4BG30a auto-start did not function. The loss of both absorber tower charge pumps caused high pressure in the system, which caused the WGC to trip resulting in excess flaring.

The 4BG30 pump tripped out most likely due to vibration that triggered the mechanical trip mechanism. The spare pump (4BG30a) auto-start did not activate when needed due to a malfunctioning switch. Pump 4BG30a was started up manually to allow the FCCU to restart. Pump 4BG30 was removed from service for repair and pump 4BG30a will be shutdown to repair the auto-start system after 4BG30 is brought back online.

Immediate steps taken to limit the duration and/or quantity of excess emissions:

FGR was operating to recover as much excess flare gas as possible.

Applicable air operating permit term(s): permit terms are not yet defined for this limit

Estimated Excess Emissions: Based on online H2S CEMS and fuel gas flow meters	Pollutant(s): SO2	Pounds (Estimate): 1255
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The incident was the result of the following (check all that apply):

- ☐ Scheduled equipment startup
- ☐ Scheduled equipment shutdown
- ☐ Poor or inadequate design
- ☐ Careless, poor, or inadequate operation
- ☐ Poor or inadequate maintenance
- ☒ A reasonably preventable condition

Did the facility receive any complaints from the public?

- ☒ No
- ☐ Yes (provide details below)

Did the incident result in the violation of an ambient air quality standard

- ☒ No

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☐ Yes (provide details below)

Root and other contributing causes of incident:

The root cause of this event was the failed auto-start function on 4BG30a.

The root cause of the incident was:

(The retention of records of all required monitoring data and support information shall be kept for a period of five years from the date of the report as per the WAC regulation (173-401-615))

☒ Identified for the first time

☐ Identified as a recurrence (explain previous incident(s) below – provide dates)

Are the emissions from the incident exempted by the NSPS or NESHAP "malfunction" definitions below?

☒ No

☐ Yes (describe below)

Definition of NSPS "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or failure of a process to operate in a normal or usual manner. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 60.2

Definition of NESHAP "Malfunction": Any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. 40 CFR 63.2

Analyses of measures available to reduce likelihood of recurrence (evaluate possible design, operational, and maintenance changes; discuss alternatives, probable effectiveness, and cost; determine if an outside consultant should be retained to assist with analyses):

The auto-start system on 4BG30a will be repaired.

Description of corrective action to be taken (include commencement and completion dates):

See above

If correction not required, explain basis for conclusion:

See above

Attach Reports, Reference Documents, and Other Backup Material as Necessary. This report satisfies the requirements of both NWCAA regulation 340, 341, 342 and the WAC regulation (173-400-107).

Is the investigation continuing? ☒ No ☐ Yes

Is the source requesting additional time for completion of the report? ☒ No ☐ Yes

Based upon information and belief formed after reasonable inquiry, I certify that the statements and information in this document and all referenced documents and attachments are true, accurate and complete.

Prepared By: _ Travis Bolsinger/Tim Figgie

Date: ___ May 28, 2014

Responsible Official or Designee: Tha J. Figgie

Date: 5/29/14